

WHAT IS CLAIMED IS

1. A variable speed transmission, comprising:
a housing;
a drive shaft having an axis of rotation and rotatably supported in said housing;
an output shaft having an axis of rotation and rotatably supported in said housing,
said output shaft operatively connected to said drive shaft;
a first pulley and a second pulley both having a common axis of rotation, said first pulley and said second pulley each having a variable pitch diameter, changes in said first and second pulley variable pitch diameters being inversely proportional;
a third pulley having an axis of rotation and rotatably attached to said drive shaft;
and
a belt, said third pulley and one of said first and said second pulleys being in engagement through said belt.
2. The transmission of Claim 1, wherein said output shaft is an axle, said axle axis of rotation being perpendicularly disposed to said drive shaft axis of rotation, said axle being selectively operatively connected to said drive shaft.
3. The transmission of Claim 2, further comprising a clutch mechanism, said axle being selectively operatively connected to said drive shaft through said clutch mechanism.
4. The transmission of Claim 1, further comprising a pivot pulley assembly which comprises said first and said second pulleys, said pivot pulley assembly further comprising a pivot arm pivotably attached to said housing, said first and second pulleys being rotatably attached to said pivot arm.
5. The transmission of Claim 4, wherein said axes of rotation of said first and third pulleys are parallel but separated.
6. The transmission of Claim 5, wherein said pivot arm is manually pivoted relative to said housing, the distance between said axes of rotation of said first and third pulleys is changed in response to movement of said pivot arm.
7. The transmission of Claim 6, wherein said first and said second pulley pitch diameters are varied in response to movement of said pivot arm, whereby a drive ratio between said first and said second pulleys is varied.

8. The transmission of Claim 5, further comprising an electric linear actuator operatively connected to said pivot arm, said linear actuator having a first position and a variable second position.

9. The transmission of Claim 8, wherein said pivot arm has a first position when said linear actuator is in its said first position, and said pivot arm has a second position when said linear actuator is in its said second position.

10. The transmission of Claim 9, wherein said first and said second actuator positions are variable and said first and second pivot arm positions are variable, whereby the drive ratio between said first and second pulleys is variable.

11. The transmission of Claim 1, wherein said third pulley has a variable pitch diameter which is varied in response to changes in the pitch diameter of said one of said first and second pulleys.

12. The transmission of Claim 11, further comprising a spring in engagement with said third pulley, said third pulley variable pitch diameter being biased into its smallest sized diameter by said spring, whereby engagement of said third pulley and said one of said first and second pulleys through said belt is maintained.

13. The transmission of Claim 11, wherein a drive ratio between said third pulley and said one of said first and second pulleys is variable.

14. An implement comprising:

- a deck;
- an engine attached to said deck and having a pulley;
- an axle rotatably supported by said deck;
- a ground engaging wheel driven by said axle; and
- a variable speed transmission attached to said deck and comprising:
 - a housing,
 - a drive shaft having an axis of rotation and rotatably supported in said housing, said drive shaft being operatively connected to said axle,
 - a first variable pitch diameter pulley and a second variable pitch diameter pulley, said first variable pitch diameter pulley and said second variable pitch diameter pulley having a common axis of rotation, said first variable pitch diameter pulley having a first variable pitch diameter and said second variable pitch diameter pulley having a second

variable pitch diameter, said first and said second variable pitch diameters being in an inversely proportional relationship,

a third pulley rotatably attached to said drive shaft, and

a transmission belt, said third pulley assembly and one of said first and said second variable pitch diameter pulleys being in engagement though said belt; and

a drive belt extending between said engine pulley and the other of said first and second pulleys.

15. The implement of Claim 14, further comprising a pivot pulley assembly which comprises said first and said second pulleys, said pivot pulley assembly further comprising a pivot arm pivotably attached to said housing, said first and second pulleys being rotatably attached to said pivot arm.

16. The implement of Claim 15, wherein said first and said second pulley pitch diameters are varied in response to movement of said pivot arm, whereby a drive ratio between said first and said second pulleys is varied.

17. The implement of Claim 16, wherein said engine maintains a substantially constant speed, and said third pulley has a speed which is varied in response to variation of said first and said second variable pitch diameters.

18. The implement of Claim 17, wherein said third pulley has a variable pitch diameter, said third pulley having a speed which is varied in response to variation in said third pulley pitch diameter.

19. The implement of Claim 15, further comprising a linear actuator operatively connected to said pivot arm, said linear actuator being electronically moved, wherein said pivot arm is pivoted by said linear actuator and said pivot pulley assembly is moved in response to rotational movement of said pivot arm.

20. An electronic ground speed regulator for an implement, comprising:
a variable speed transmission having a speed control mechanism;
an electric linear actuator in communication with said speed control mechanism, said actuator having a first position and a second position and being moved therebetween in response to changes in an electrical input to said actuator, said speed control mechanism being varied in response to movement of said actuator from one of said first and second positions to the other of said first and second positions;

an electronic control circuit in electrical communication with said actuator, said electronic circuit having a first condition wherein said electronic control circuit maintains said actuator in one of its said first and second positions and a second condition wherein said electronic control circuit controls movement of said actuator between its said first and second positions; and

an operator-manipulated switch in electrical communication with said electronic control circuit, movement of said actuator being controlled through manipulation of said switch.

21. The electronic speed regulator of Claim 20, wherein said first and second positions are variable positions.